



# What do you know about Genital herpes?

*BY*

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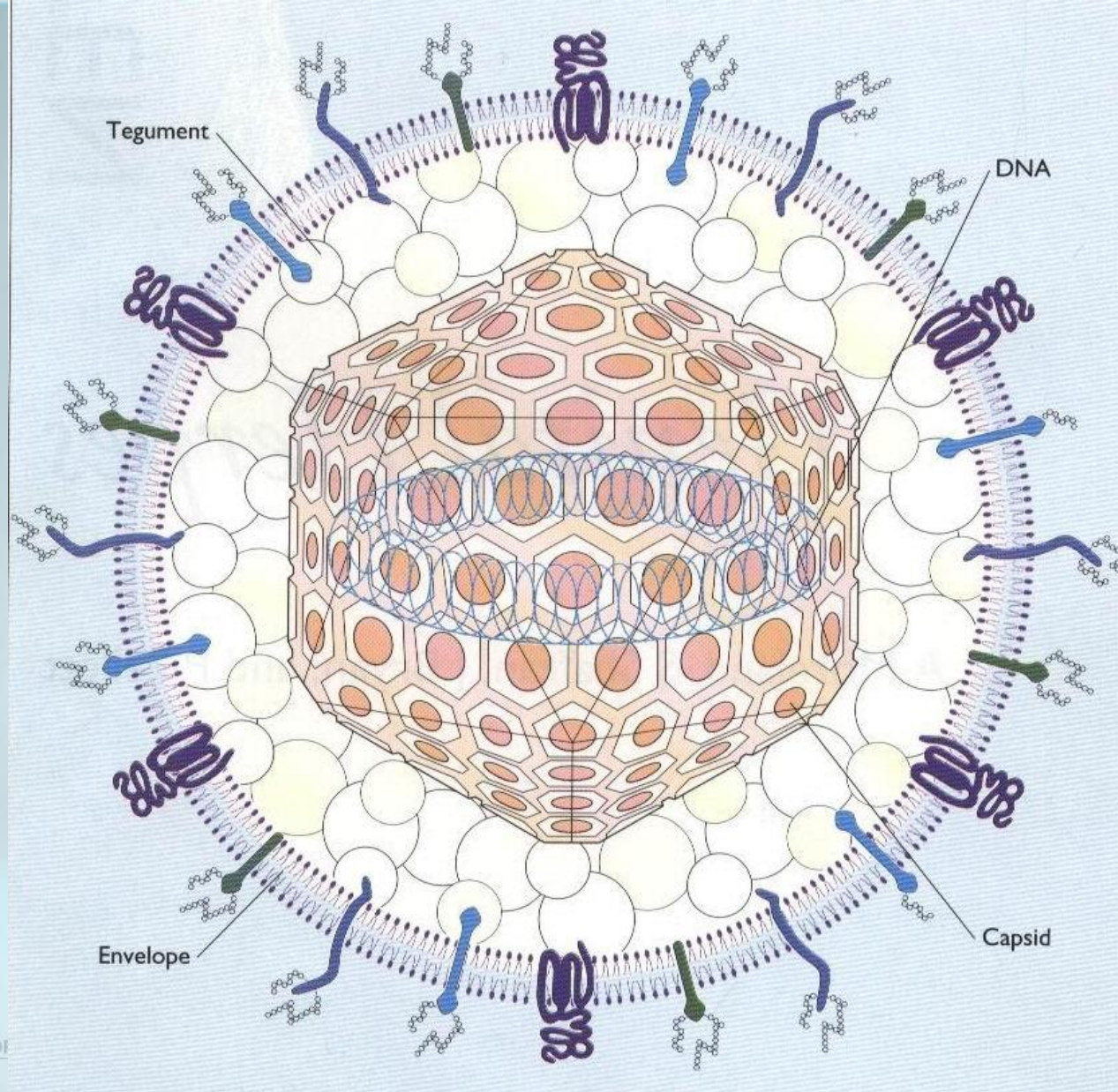
# The virus

- Herpes simplex virus is a *double stranded DNA* virus which can be *classified* into types 1 and 2. both types can cause *genital infection* even though type 1 usually causes lesions of face, lips, and eyes.
- Infection with either HSV type is *lifelong*; the virus *persists* in neural tissue, typically in the dorsal root ganglia.

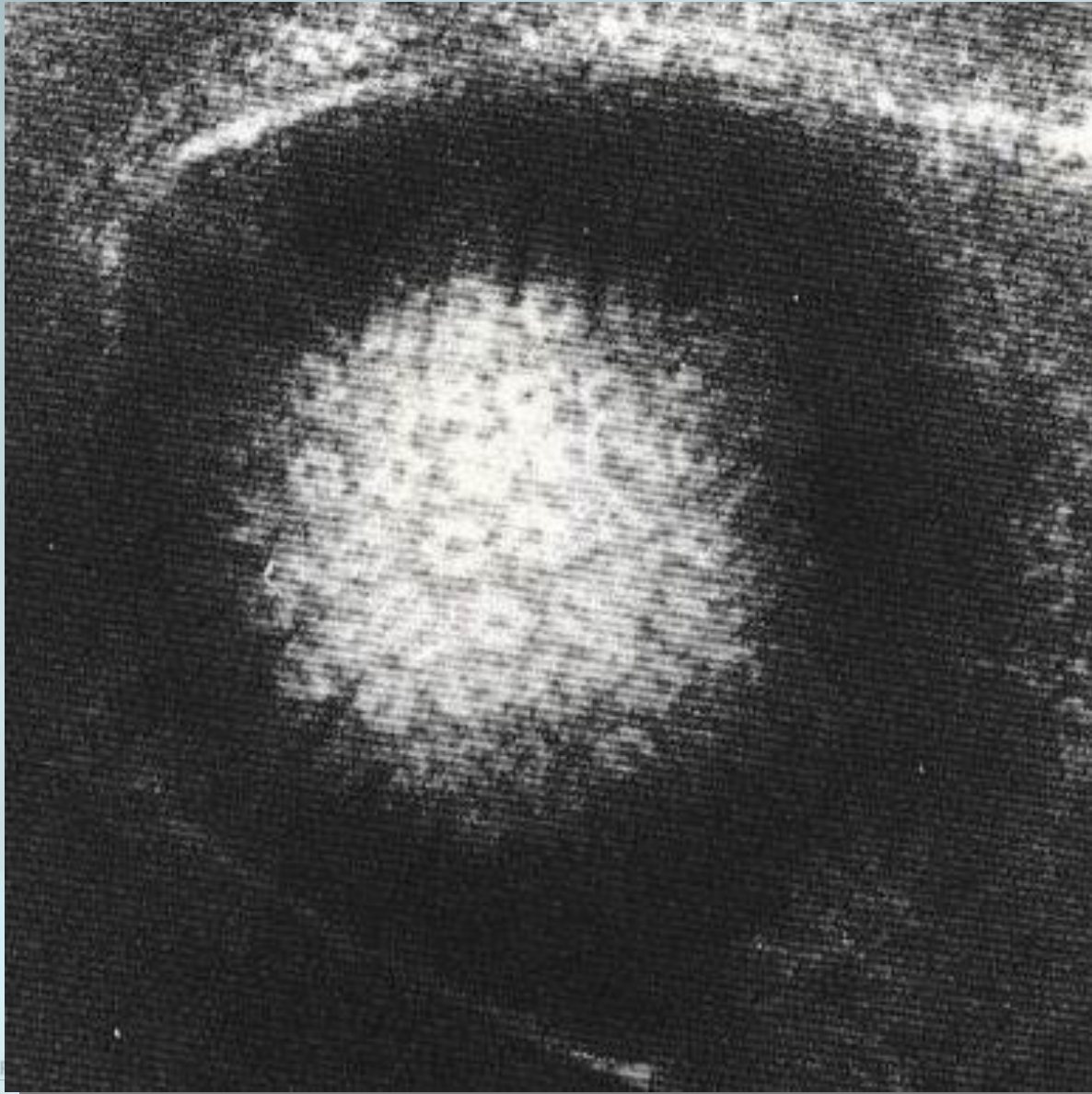
- The presence of specific antibody denotes *current infection* and the potential for *clinical recurrences*, sub clinical viral shedding, and transmission of the virus to sex partners.
- The virus is *transmitted* by sexual intercourse or other physical contact . Orogenital contact with a partner with type 1 labial lesions may result in genital herpes.



# HV Morphology (Diagrammatic representation)



# HV Morphology(E.M.)





## HUMAN HERPESVIRUSES

### VIRUS

Herpes simplex virus type 1 (HSV-1)

Herpes simplex virus type 2 (HSV-2)

Varicella-zoster virus (VZV)

Epstein-Barr virus (EBV)

Cytomegalovirus (CMV)

Human herpesvirus 6 (HHV-6)

Human herpesvirus 7 (HHV-7)

Human herpesvirus 8 (HHV-8)

### PRINCIPAL DISEASES

Skin and mucosal vesicles and ulcers, especially oral

Skin and mucosal vesicles and ulcers, especially genital

Chickenpox, shingles

Infectious mononucleosis

Serious disease in immunosuppressed patients and congenital infection

Roseola infantum, non-rash febrile illness in young children, and possibly pneumonia in immunosuppressed patients

Some cases of roseola infantum

Associated with Kaposi's sarcoma and some lymphomas

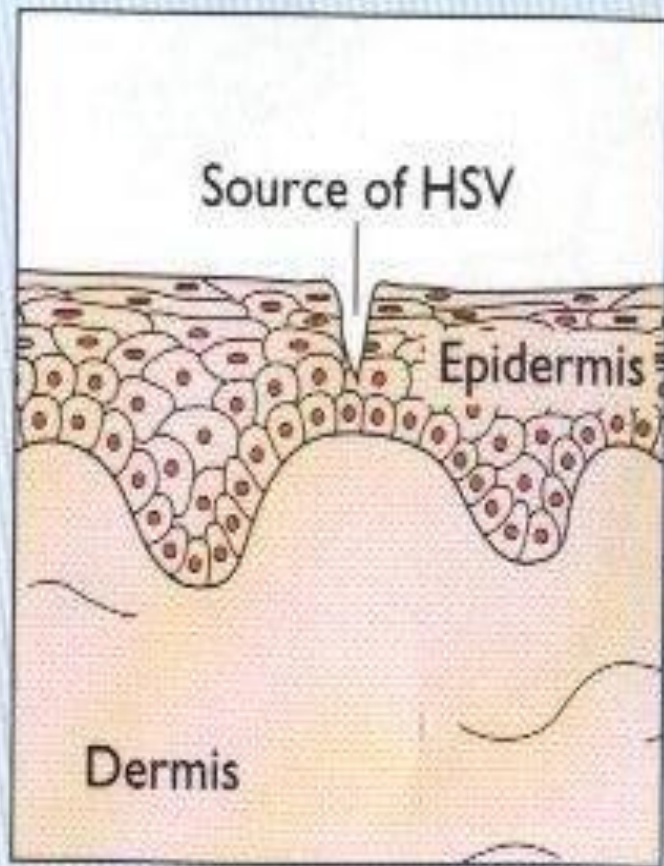
# Transmission

- Only by **direct contact** with infected lesions or secretions ;most transmission probably results from sub clinical infection .
- **Perinatal** transmission to infants ,especially in presence of initial maternal genital herpes.
- Rare **autoinoculation** or **nosocomial** infection (e.g., herpetic whitlow, keratoconjunctivitis).
- **Age:** all ages susceptible ;highest acquisition rates in age range 25-35.
- **Sex:** women more susceptible than men ,probably owing to larger surface area exposed.
- **Incubation period:** usually 2-10 days for symptomatic initial herpes , occasionally up to 3 weeks

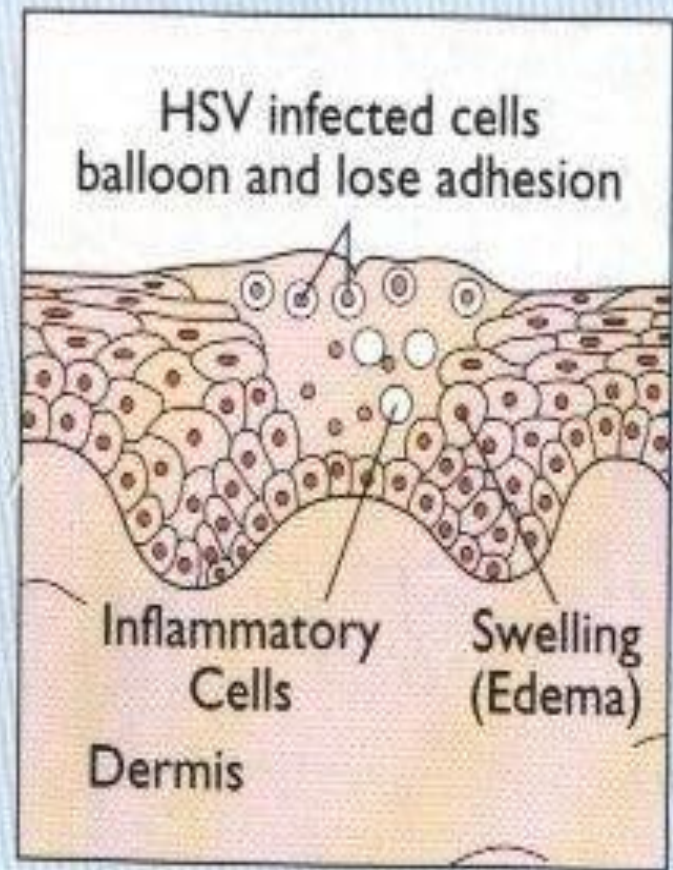


# Pathogenesis

Innoculation  
of herpes viral  
particles into  
broken skin

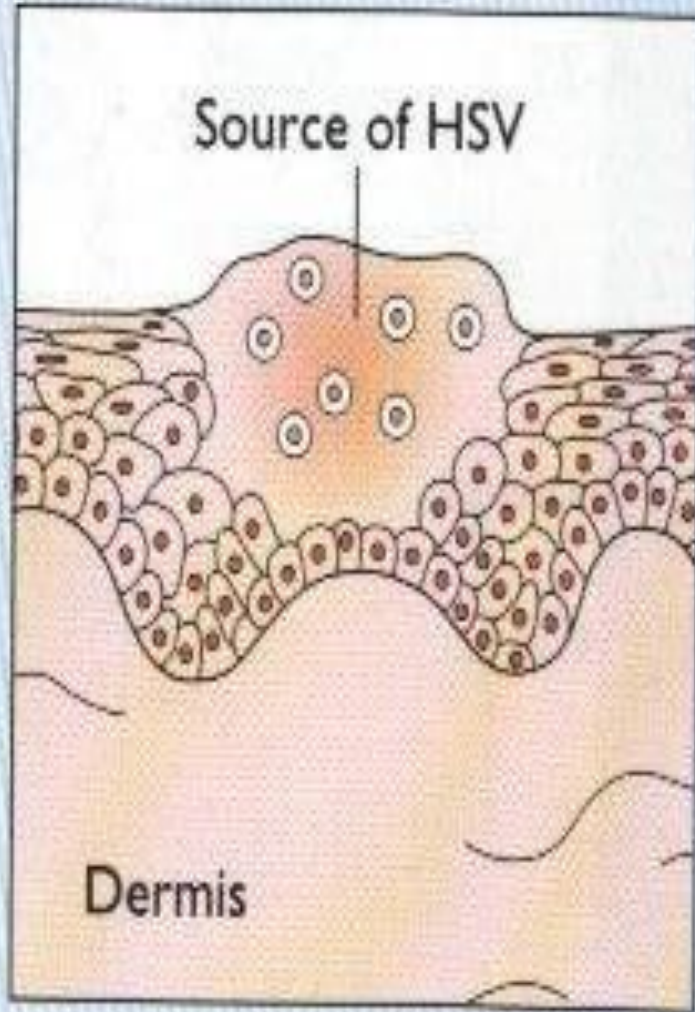


Replication of virus  
in epidermal cells  
leads to swelling and  
tenderness

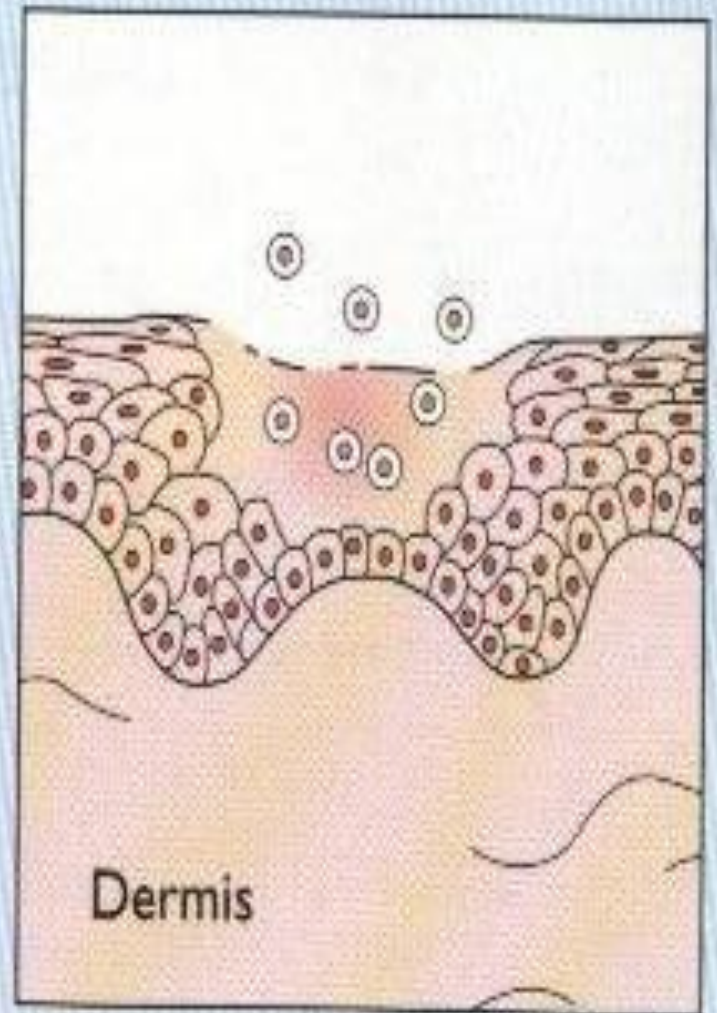




Vesicle formation as  
serum collects within  
damaged epidermis

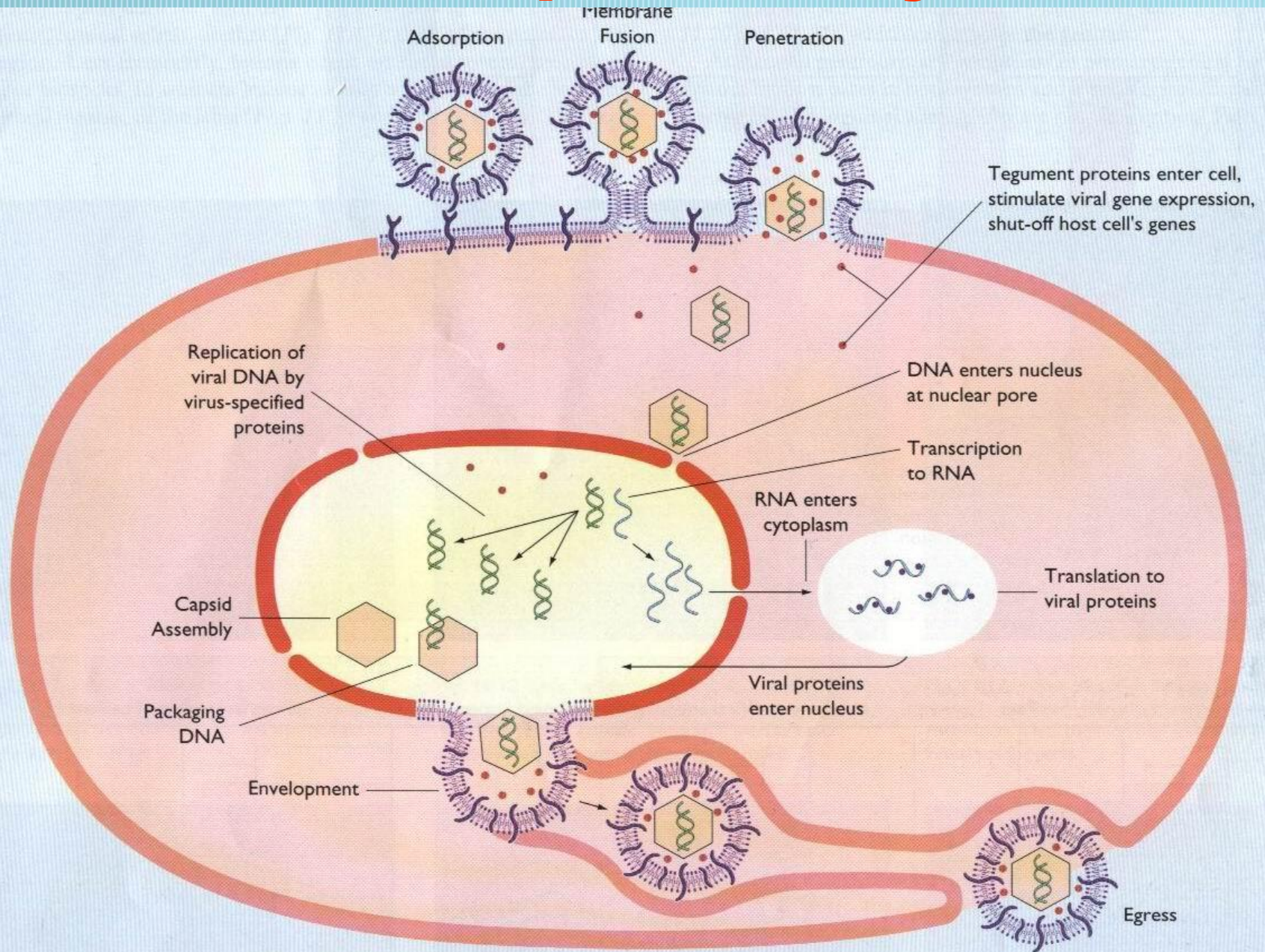


Erosion and viral shedding  
(blister has lost roof)  
Epidermis begins  
to heal





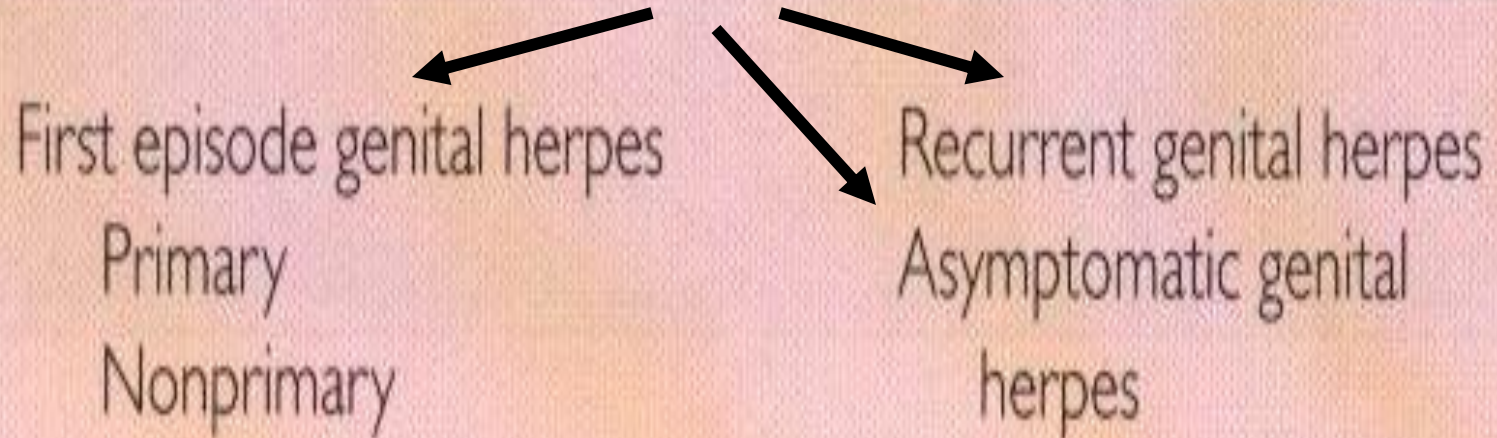
# HSV Replication cycle





# TYPES OF GENITAL HERPES

## Clinical Classification:



# **Primary herpes** *(1st Episode Primary Infection):*

First infection with either HSV-1 or HSV-2 .

- Patient seronegative for both types at onset .
- Symptomatic cases commonly severe, often prolonged (2-3weeks); mucosal involvement, regional lymphadenopathy , regional neuropathy, and systemic manifestations are common .
- 20-40% of cases due to HSV-1, acquired by either genital or orogenital exposure .

# **Initial Non primary herpes**

*(1st Episode non Primary Infection)*

- First clinical episode in presence of existing antibody, to opposite HSV type.
- Most cases due to HSV-2 in persons seropositive for HSV-1.
- Systemic manifestations uncommon.
- 40% of apparent initial cases are first recognized recurrence in persons with longstanding infection .

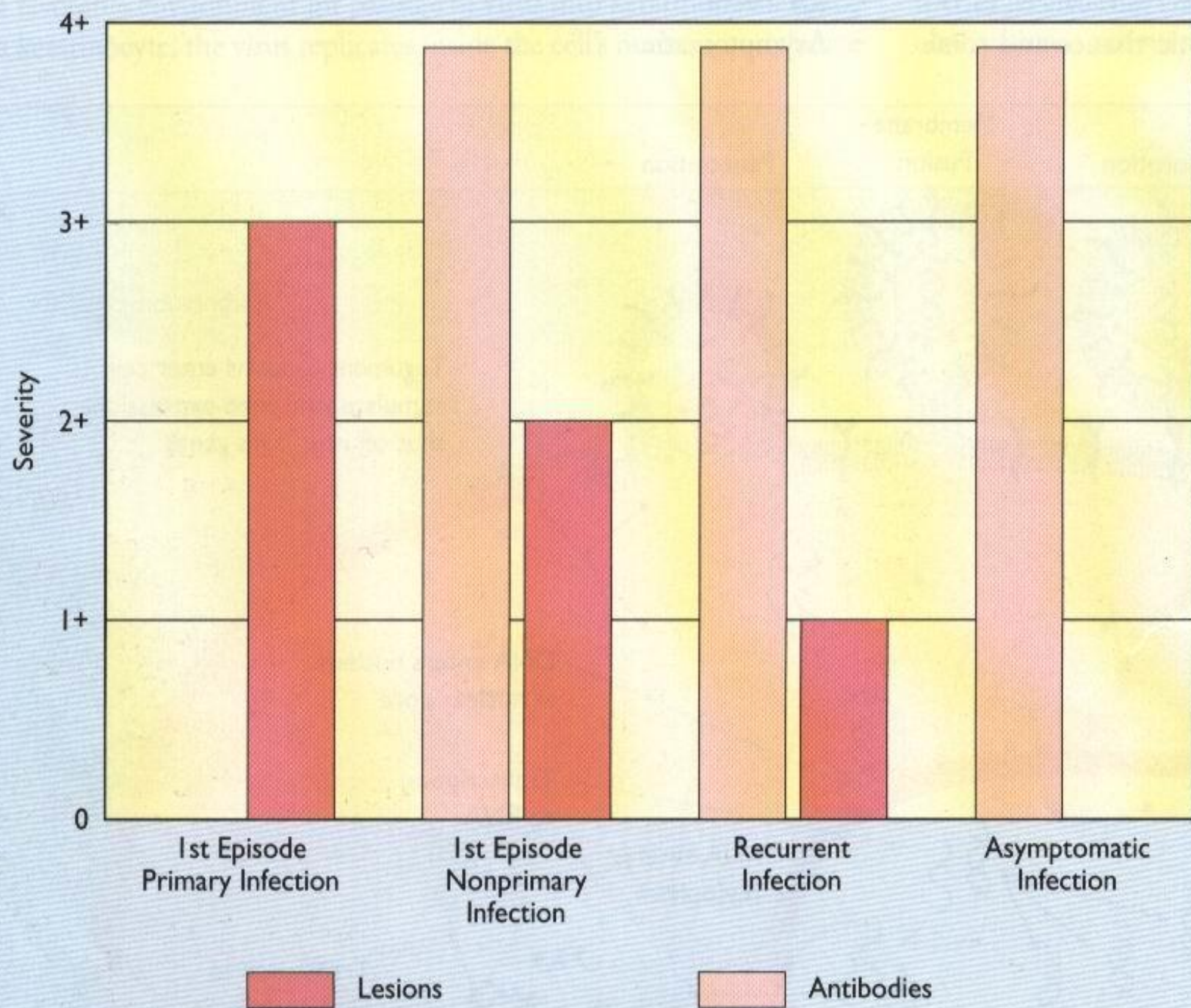


# Recurrent Herpes:

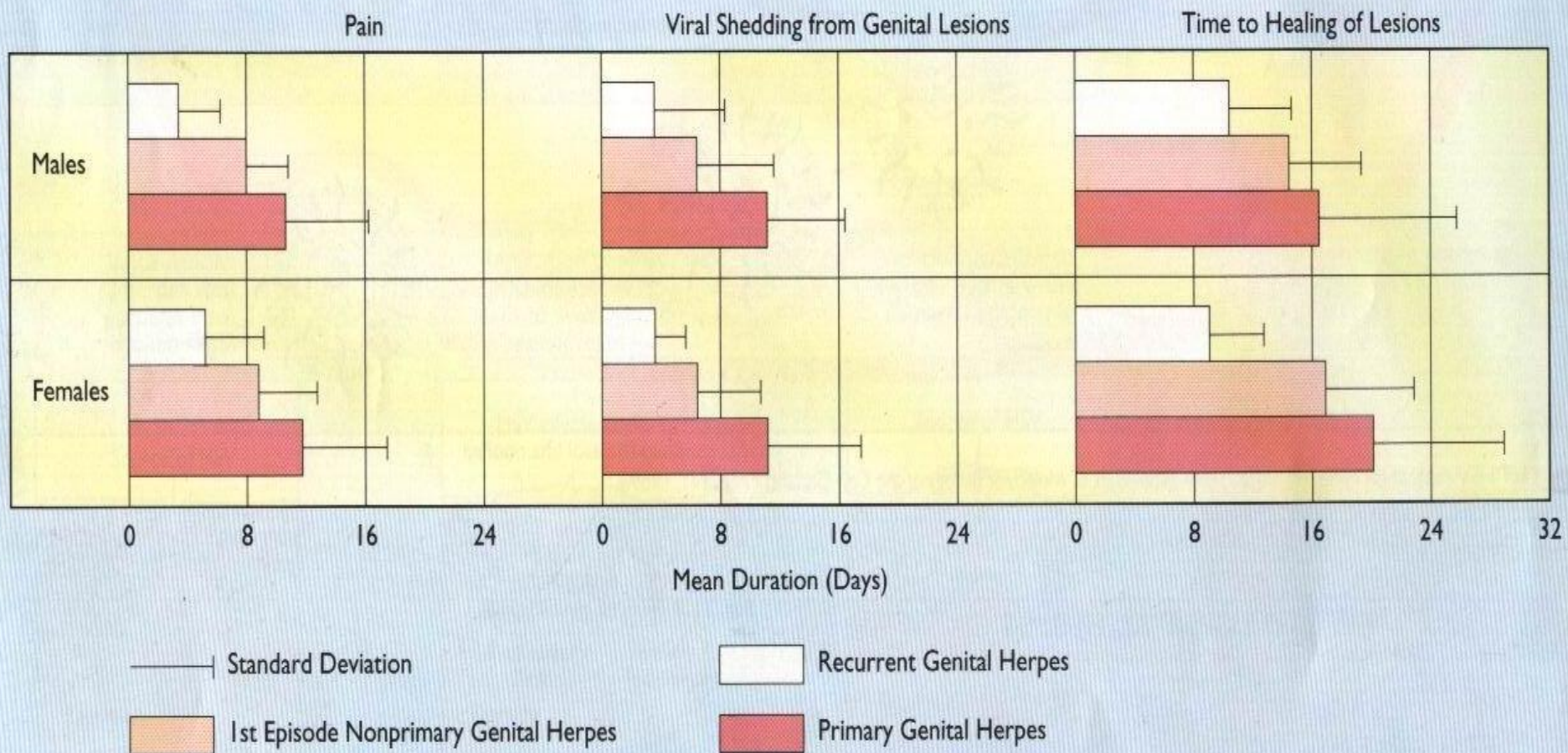
- Second or subsequent symptomatic outbreak due to same virus type.
- Most cases clinically mild, lymphadenopathy, neuropathy, and systemic manifestations are uncommon .
- Because HSV-1 causes few clinical recurrences, HSV-2 is the cause of 90% of recurrent genital herpes .

# **Subclinical infection (Asymptomatic):**

- Most cases of HSV infection, whether primary, nonprimary initial, or recurrent, are subclinical; includes truly asymptomatic and symptomatic but unrecognized infection ; occurs in both, never-symptomatic patients and between recognized clinical recurrences.
- Subclinical viral shedding can be detected by culture.







# ***Diagnosis of Genital herpes***

- History
- Clinical examination: symptoms and signs
- Investigations

# Symptoms:

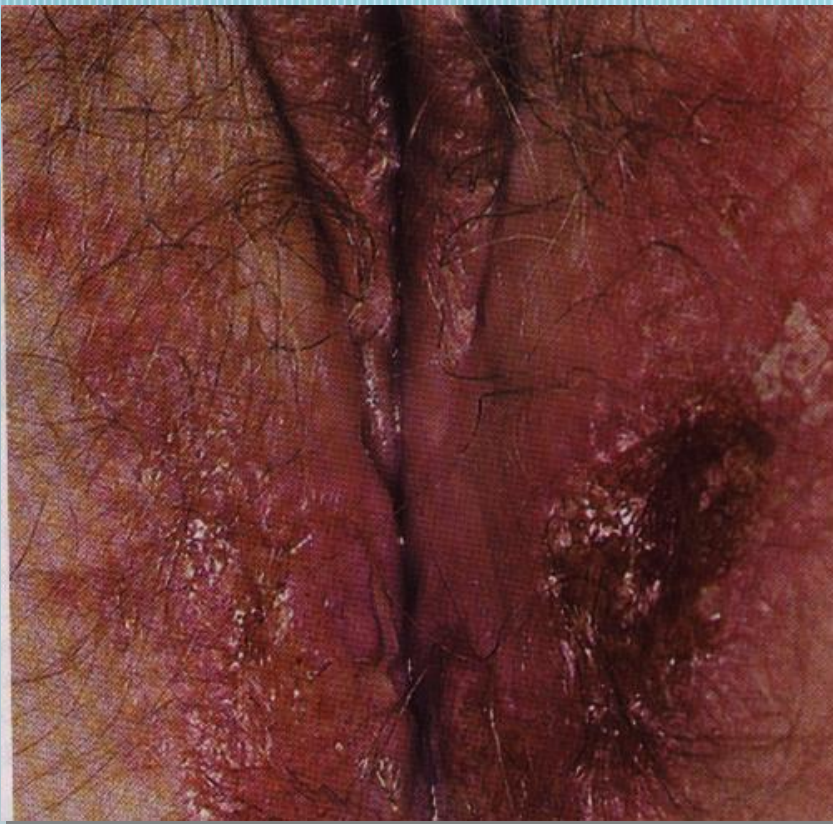
- Multiple genital or perianal lesions
- Vaginal or urethral discharge
- Painful urethritis (dysurea)
- Inguinal pain and swelling
- Neuropathic symptoms referable to sacral nerve roots (e.g., urinary retention , constipation, paresthesias)
- Fever, malaise, headache



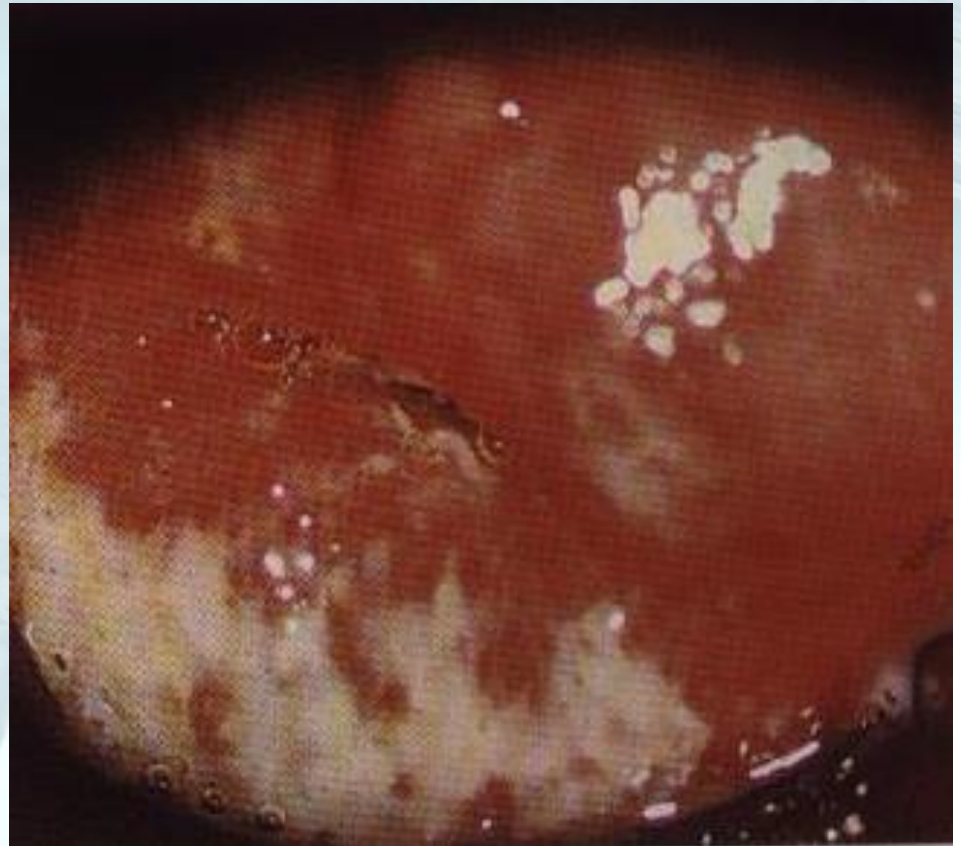
# Physical Examination

- Erythematous papules, vesicles, ulcers or crusts.
- Lesions often occur in clusters .
- Ulcers are usually tender, and nonindurated, many lesions are small and nonspecific in appearance.
- Lymphadenopathy when present usually is bilateral, firm moderately tender, without fluctuance or cutaneous erythema.
- Erosive cervicitis or urethritis (often with localized tenderness along penile shaft) is common in primary infection.

- Deeply erosive genital, perianal, or perioral lesions are common in AIDS patients.
- Nuchal rigidity and photophobia sometimes present.
- Erythema multiform sometimes occurs as systemic response to recurrent genital herpes.



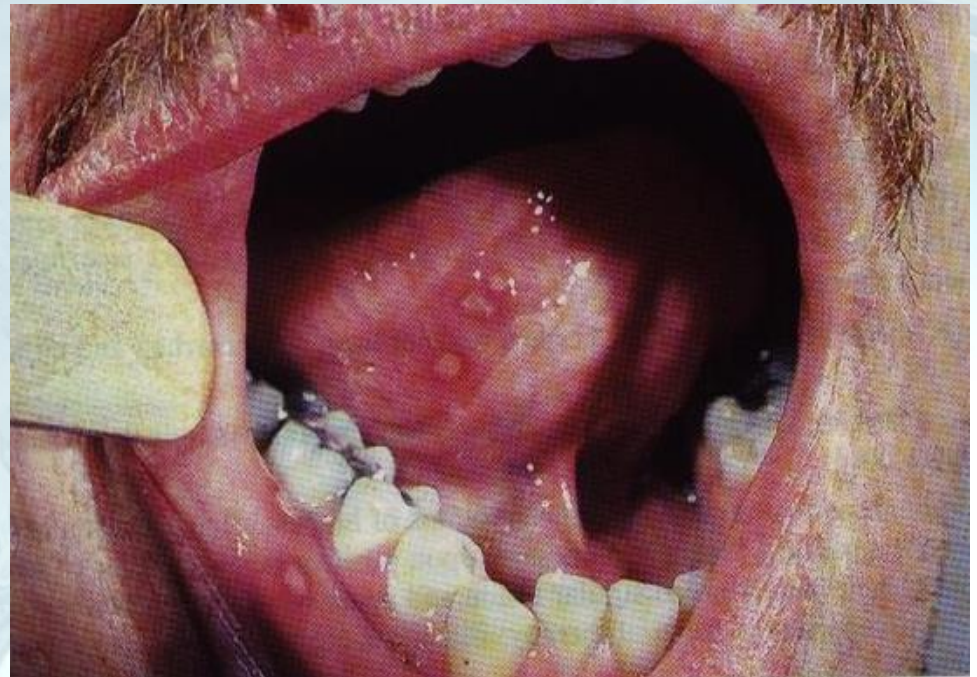
## Primary genital herpes







## **Primary genital and oral herpes**



# Primary genital herpes



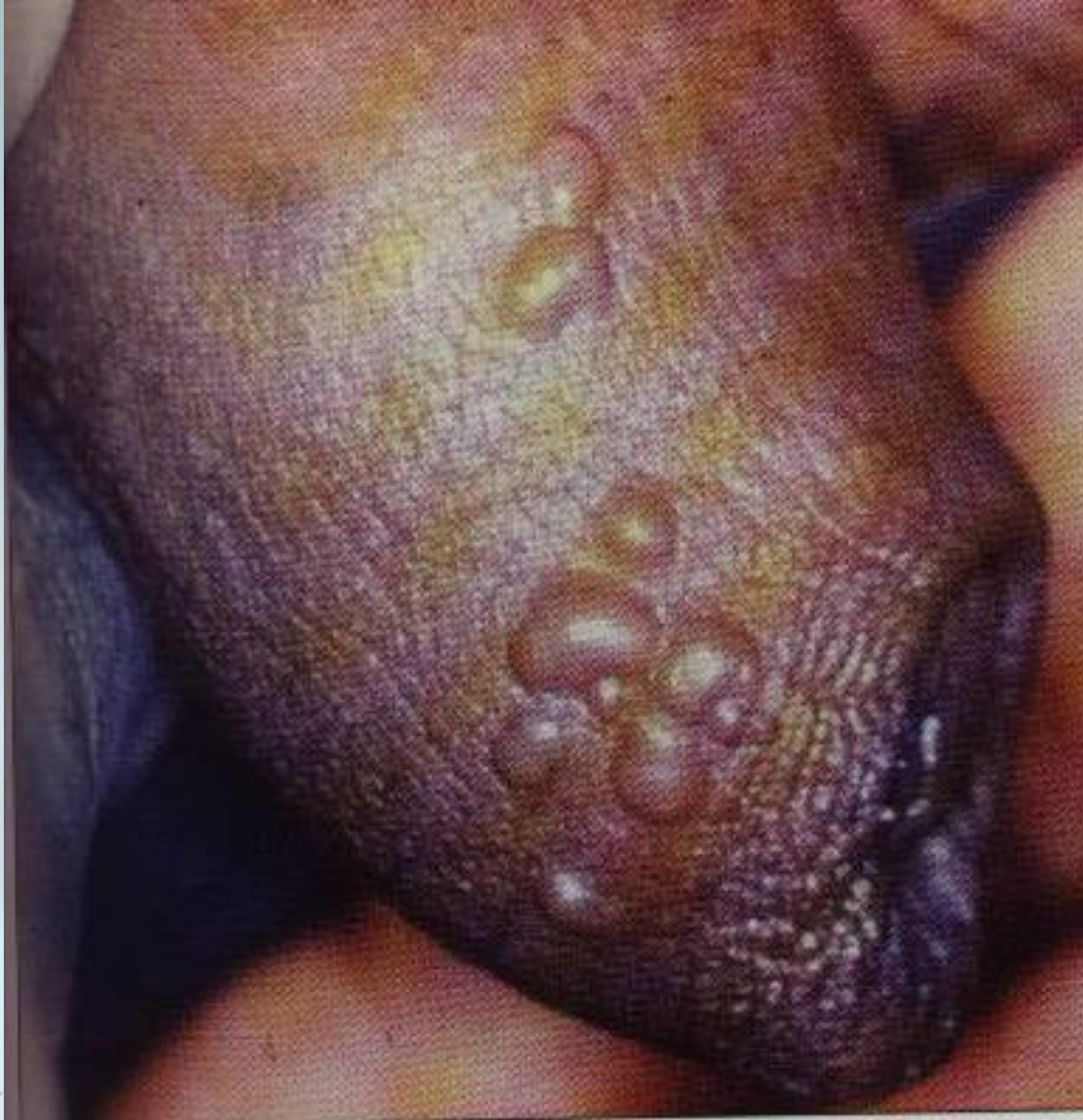


# Primary genital herpes





# Primary genital herpes

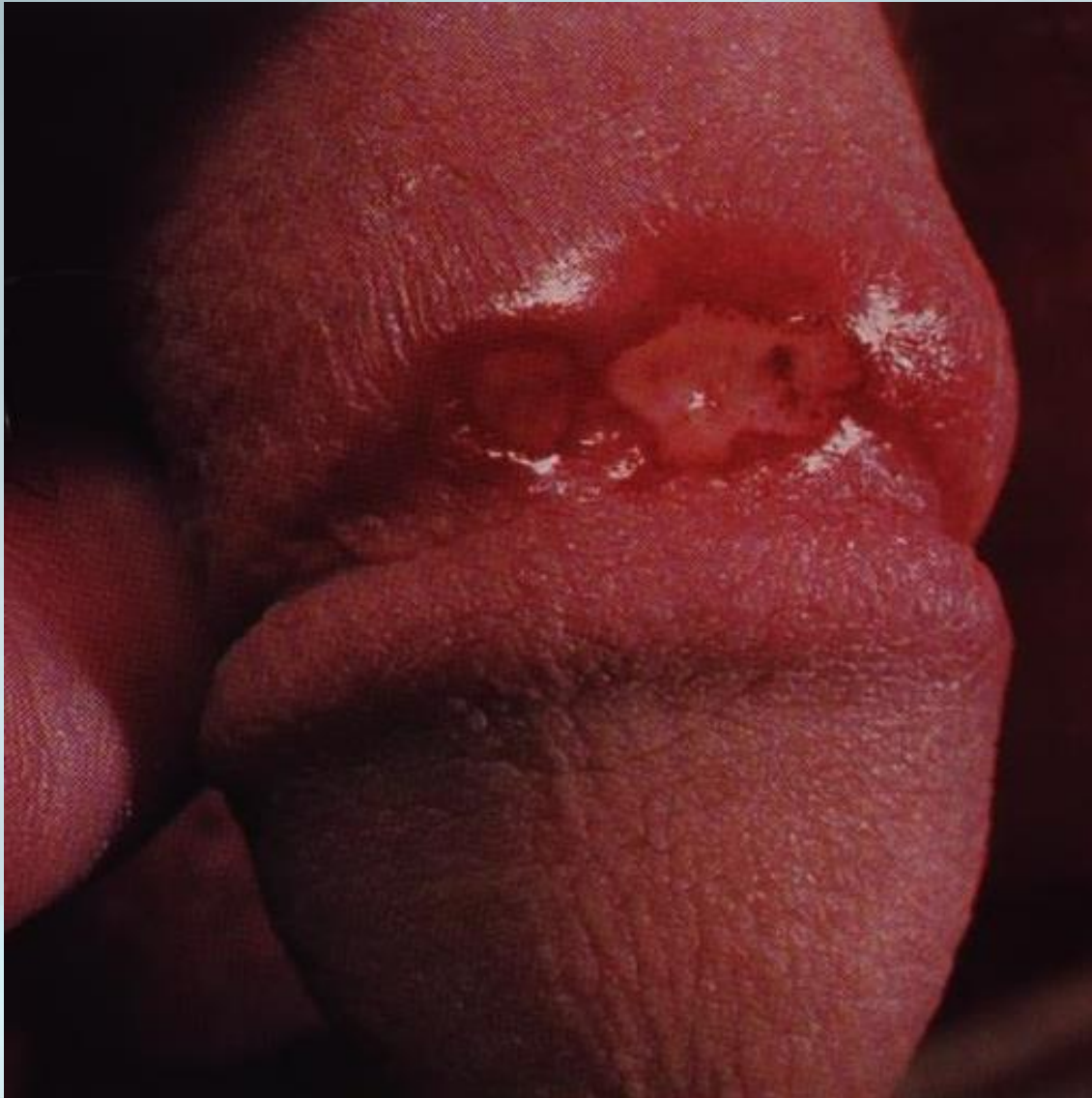


# Primary genital herpes





# Primary genital herpes



# Recurrent genital herpes





# Recurrent genital herpes



# Recurrent genital herpes





# Herpes erosion in urethral meatus



# Herpetic whitlow





# Laboratory Diagnosis

## 1-Virus isolation :

Isolation in cell culture is the test of choice to identify HSV in lesions ,yielding highest in initial episodes or from recurrent lesions less than 2daysold; recommended in workup of all patients with genital ulcer disease.

## 2- Other direct tests :

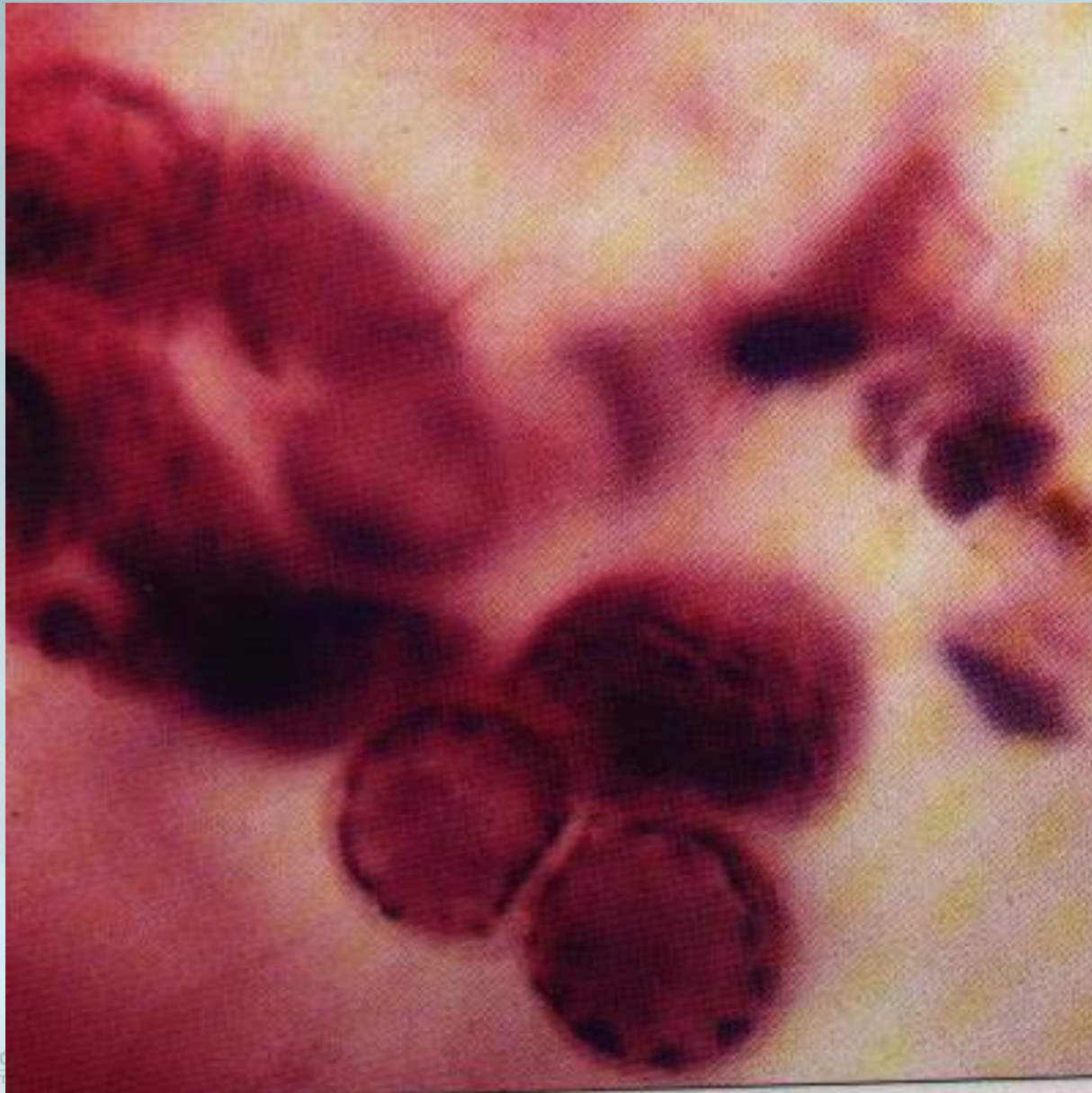
*\*PCR assay for HSV DNA* available in some laboratories and more sensitive than culture but not commercially available

*\*Direct-fluorescence microscopy* and other immunochemical tests for HSV may approach sensitivity of culture in samples from fresh genital lesions ,but most assays do not distinguish HSV-2 from HSV-1.

*\*Cytological methods:* (Tzanck test with Giemsa or Papanicolaou stain) insensitive and rarely indicated.



# HSV-Infected cells in cytology specimen



# 3-Serology

-Noncommercial *Western blot assay* remains serological gold standard , accurate type-specific HSV-2 antibody tests recently became commercially available.

-Most previous tests (e.g., *indirect fluorescent antibody*, and *neutralization assay*) did not distinguish HSV-1 from HSV-2 antibody and have little or no role in diagnosing or screening for genital herpes .



# Problems associated with genital herpes

**.INCREASING.**



**.NO CURATIVE TREATMENT.**



**.RECURRENT.**



**\*BREAKDOWN OF RELATIONSHIPS**

**\*PSYCHOSEXUAL PROBLEMS**

**\*DEPRESSION.**

**.NEONATAL INFECTIONS.**

# *\*Increasing ↑ why.....?*

- 1-The age of sexual maturity has decreased, the age at which people have sexual intercourse for the first time is lowered and more people have premarital sexual intercourse than previously.
- 2- The increasing use of oral contraceptive pills and intra uterine devices has removed the protective effect of barrier techniques such as sheath.



- 3-Since population are now more mobile nationally and internationally certain groups (Tourists, immigrants, professional travelers and members of armed forces) are at risk.
- 4-In developing countries the role played by poverty, Urbanization,migration , social unrest, war and lack of diagnostic and treatment facilities are more important than in developed world.
- 5-Emergence of resistance to treatment.

# RECURRENT. Why .....?

**Skin trigger  
theory**

**Ganglion trigger  
theory**

# Counseling

- Genital herpes is an *emotive disease* ,particularly since it is recurrent and may interfere with sexual intercourse.
- patients should be warned that they are infectious when lesions are present ;they should therefore *abstain from sexual intercourse* once lesions are noted or sooner if prodromal symptoms are present .



- Since lesions are widespread, particularly in women , *the sheath will not always stop contact with infected areas* and is not therefore effective in preventing infection during an attack.
- Since a symptomatic infection and viral shedding can exist, *the regular use of condom* between overt attacks will need to be discussed with patients.

# SO THAT.....

*The following points should be considered:*

- Patients often need a great deal of advice and emotional support and since the condition is incurable, it is important that doctors at least fulfill these two functions.
- Likewise patients should be reminded that other forms of intimacy and close bodily contact ,apart from sexual intercourse ,are not precluded.

# NO CURATIVE TREATMENT. Why ?

*\*The ideal therapy of genital herpes should be includes the following goals:-*

- 1-Preventing infection.
- 2-Shortening the clinical course of the disease.
- 3-Preventing the development of latency and subsequent clinical recurrence.
- 4-Decreasing the transmission of the disease.
- 5-Eradicating established latent infection.



## *The available Antiviral chemotherapy:*

- **Systemic therapy:** acyclovir, valacyclovir, or famcyclovir is mainstay of therapy ;valacyclovir and famcyclovir offer improved bioavailability compared with Acyclovir.
- **Topical therapy:** has little clinical effect and rarely indicated.
- **Supportive therapy:** \*cleaning and dryness of the lesions  
\*Topical anaesthetic ointment.

*Treatment speeds clinical resolution, prolong clinical recurrences, and reduces subclinical viral shedding , but does not eradicate HSV.*

# Treatment of genital herpes

## *1. Initial (primary and nonprimary)*

\*All cases should be treated even if apparently mild to shorten duration of symptoms and prevent accelerated course

***Valacyclovir*** 1.0 g PO bid for 7-10 days

***Famcyclovir*** 250 mg PO tid for 7-10 days

***Acyclovir*** 400 mg PO tid for 7-10 days

*severe cases* require hospitalization:

***Acyclovir*** 5-10 mg /kg body weight IV every 8 h for 5-7 days or until improved , then change to oral

***Valacyclovir , Famcyclovir or Acyclovir*** to complete 7-14 days total therapy

## 2. *Recurrent*

**\*Episodic therapy** speeds healing of recurrent outbreaks if started within 1 day of onset ;patients with prodrome may abort outbreaks by prompt treatment.

-Suppressive therapy reduces symptomatic recurrences by 70-80%.

-**Valacyclovir 500 mg PO bid for 5 days.**

-**Famcyclovir 125 mg PO bid for 5 days.**

-**Acyclovir 400 mg PO bid for 5 days.**



*\*Suppressive therapy* should be offered to all patients with recurrent herpes especially if severe , if there is significant stress, anxiety, or depression due to recurrent herpes , or if patient has more than 6 recurrences per year; after suppression achieved, adjust regimen to determine optimal dose and frequency discontinue suppressive therapy at 1-year intervals to reassess frequency and severity of outbreaks.

- Valacyclovir** 500 mg PO daily ;or 1 g PO daily for patients with \$ 10 symptomatic outbreaks per year.
- Famcyclovir** 250 mg PO bid .
- Acyclovir** 400 mg PO bid.

### *3.Prevention(Prophylctic therapy)*

*\*\*Currently there is no proven completely effective means of prophylaxis of herpes simplex infection.*

A. Management of sex partners.

B. Prevention of neonatal herpes:

- Cesarean section indicated for women with overt herpes lesions at term .
- Prophylactic acyclovir near term may prevent otherwise unnecessary cesarean deliveries.

## C. Vaccination:

\*Prophylactic subunit protein vaccines (HSV-2: gD) vaccine, (HSV-2: gB) vaccine and (HSV-2: gD and gB) vaccine.

\*Recently a DNA vaccine encoding gD2 has shown some protection in animal models. These products are currently in preclinical or early stages of development.



بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

وَلَا تَقْرَبُوا الزِّنَا إِنَّهُ كَانَ فَاحِشَةً وَسَاءَ سَبِيلًا  
صَدَقَ اللَّهُ الْعَظِيمُ

الآية 32 سورة الإسراء

THANK YOU